Self-Assessment 8 till Lesson 3

1 (A) Complete the following sentences using the words below :
(salt – 3% – 97% – fresh – downstream)

1. Rivers and streams contain .... water, which represents about .... of the total amount of water on Earth.
2. The place where a river ends is called ....
3. Oceans and seas contain .... water, which represents .... of the total amount of water on Earth.

(B) Give a reason for the following :

Dams affect the amount of water in some water bodies as rivers.

....

....

2 (A) Put (✓) or (X) :

1. Generating electricity is from the uses of water. ( )
2. Building dams across rivers is from human activities which cause imbalance of water. ( )
3. More than 10% of the world's animal species live only in freshwater habitats. ( )

(B) What happens if ...?

The level of water in a river decreases.

....

....

3 Look at the following pictures, then put (✓) or (X) :

A river
Picture (A)

A sea
Picture (B)

A small creek
Picture (C)

1. The type of water that is found in all pictures is fresh water only. ( )
2. The correct flow of water in the previous pictures is water in picture (C) flow into picture (A) then flow into picture (B). ( )
3. The type of water that is found in picture (B) represents 3% of water surface on Earth. ( )
4. The water body in picture (C) is considered as a type of tributaries. ( )

Self-Assessment 9 till Lesson 4

1 **(A) Complete the following sentences using the words below :**

(Pollution – rains – oil)

1. Plastic ruler can be made from .... products.
2. .... is from factors that affects the resource sustainability.
3. Groundwater is replaced by ....

(B) Give a reason for the following :

Cutting down too many trees of forests leads to soil erosion.

....

....

2 **(A) Write the scientific term of each of the following :**

1. A type of water which is suitable for drinking. (..................)
2. An area of land where all the water flows to a common location usually an ocean, a sea or other large water body. (..................)
3. The water bodies that surround the continents. (..................)

(B) What happens if ...?

Fish are eaten more than they are replaced in the ocean.

....

3 **Which of the following pictures describes the meaning of sustainability of wood ?**

Give a reason for your answer.

Picture (A)

Picture (B)

....

....

Self-Assessment 10 till Lesson 5

1 **(A) Put (✓) or (✗) :**

1. The type of water in wetlands is salt water only. ( )
2. When fresh water is polluted, it becomes drinkable. ( )
3. Recycling of polluted water means removing useful materials from water. ( )

(B) Give a reason for the following :

Human creates many methods to filter fresh polluted water.

....

....

2 **(A) Correct the underlined words :**

1. Cotton, charcoal and <u>mud</u> can be used in simple water filter to recycle polluted water. (..............)
2. Plastic is made from <u>trees</u>. (..............)
3. <u>Preservation</u> means using resources in a way that does not negatively affect the future supply of these resources. (..............)

(B) What happens if ...?

Polluted water is passed through a water filter.

....

....

3 **Look at the following picture, then choose the correct answer :**

1. The water that enters this device is ....
   (polluted water – filtered water)
2. The water that comes out from this device is ....
   (polluted water – filtered water)
3. This device is used to filter the water to become ....
   (drinkable – undrinkable)

Water filter

Self-Assessment 11 till Lesson 6

1 **(A) Choose the correct answer :**

1. Oil can be used in making ....

   a. paper. b. plastic. c. chair. d. clothes.

2. Watershed is described as a region where all of the water in that area ....

   a. has the same type of living organisms.

   b. control the wind speed and its direction.

   c. is in the same country.

   d. drains into a common water body.

3. The water body which contains mixture of salt water and fresh water is the ....

   a. estuary. b. ocean. c. river. d. lake.

(B) Give a reason for the following :

Groundwater is called by this name.

....

....

2 **(A) Put (✓) or (✗) :**

1. Wastewater engineers decide where to build water treatment plants. ( )
2. In a watershed, what happens upstream can affect the water bodies downstream. ( )
3. Opening water tap for a long time during cleaning cooking pots is from the ways of water conservation. ( )

(B) What happens if ... ?

Groundwater of wells are used faster than they are replaced by rains.

....

....

3 **Look at the following pictures, then complete the sentences below :**

Picture (A) Picture (B)

1. Water in picture .... must pass through a water filter to become clear.
2. Water in picture .... is drinkable water.
3. Wastewater engineers work to treat water in picture .... to become as water in picture ....

Self-Assessments

on Concept (4.1)

Self-Assessment 12 on Lesson 1

1 (A) Correct the underlined words :

1. Planets orbit Earth due to the gravity between them. (..............)
2. Earth pulls objects towards its moon. (..............)
3. The gravity of the Sun affects the ocean tides. (..............)

(B) Give a reason for the following :

After the skydivers jump from a plane, they always move toward the Earth's surface.

....

....

2 (A) Put (✓) or (✗) :

1. Earth pulls planets to orbit the Sun. ( )
2. Earth orbits the Sun due to gravity between them. ( )
3. If the moon moves away from Earth, the attraction force between them will increase. ( )

(B) What happen to ... ?

The moon if the gravity of Earth disappears.

....

....

3 The opposite figure shows two similar air planes, choose the correct answer :

Airplane (B)

Airplane (A)

Earth

(A) The attraction between Earth and the airplane (A) is .... **(smaller than – larger than – equal to)** the attraction between Earth and airplane (B).

(B) The gravity of Earth .... **(increases – decreases – doesn't change)** when the distance between Earth and the airplane increases.

Self-Assessment 13 till Lesson 2

1 (A) Put (✓) or (✗) :

1. In space, there is no gravity between the Sun and planets. (   )
2. Gravity of the moon is smaller than that of Earth because it has smaller mass. (   )
3. A skydiver moves down towards the ground because gravity changes his mass. (   )

(B) What happens if ...?

A magnet is placed near to some paper clips.

....

....

---

2 (A) Complete the following sentences using the words below :

(magnetism – contact force – gravity)

1. The force arises between two objects that touch each other is called ....
2. The occurrence of attraction or repulsion forces between magnets is due to .... in both of them.
3. Earth pulls objects by the force of ....

(B) Give a reason for the following :

The ball changes its direction after we throw it upward.

....

....

---

3 The opposite figure shows a swimmer that jumps from a stand into a swimming pool. Choose the correct answer :

1. The force that attracts the swimmer towards the water surface is known as .... force.
   a. pushing b. gravity
   c. magnetism d. repulsion

2. This force changes the ....
   a. direction of movement of swimmer. b. mass of swimmer.
   c. depth of swimming pool. d. length of the stand.

Self-Assessment 14 till Lesson 3

1 (A) Write the scientific term of each of the following :

1. The force that attracts paper clips to the magnet. (.............)
2. The change of an object position when force acts on it. (.............)
3. The force that pulls all objects on Earth toward its center. (.............)

(B) Give a reason for the following :

Planets revolve around the Sun in fixed orbits.

....

....

2 (A) Correct the underlined words :

1. Earth attracts the <u>Sun</u> to move around it. (.............)
2. If the mass of the moon <u>decreases</u> its gravity force will increase. (.............)
3. The gravity force of Earth to a person in a flying air plane is <u>equal to</u> that when the same person stands on the ground. (.............)

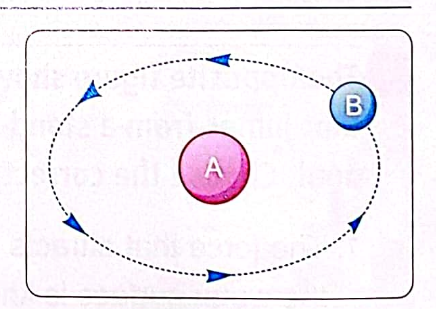
(B) What happens to ...?

The gravity force of Earth if its mass decreases.

....

....

3 Look at the opposite model that represents two bodies in the solar system then choose the correct answer :



a. (A) is the Earth and (B) is the Sun.

b. (A) is the moon and (B) is the Earth.

c. (A) is the Earth and (B) is the moon.

d. (A) is the moon and (B) is the Sun.

Self-Assessment 15 till Lesson 4

1 (A) Complete the following sentences :

1. Motion is the change of an object's ....
2. A parachute in air is affected by .... that acts against the .... force of Earth.
3. Paper clips are attracted to the magnet by a force called ....

(B) What happens if ... ?

The person uses the brake of a moving bicycle.

....

....

2 (A) Choose the correct answer :

1. .... decreases the speed of a parachute during landing.
   a. Gravity force　b. Air resistance
   c. Magnetism　d. Electric force
2. The gravity of .... affects the ocean tides.
   a. the Earth　b. the Sun　c. the moon　d. the magnet
3. Gravity force depends on the .... of an object.
   a. mass　b. temperature　c. height　d. color

(B) Give a reason for the following :

The atmosphere is kept around the Earth.

....

....

3 From the opposite figure, which arrow represents the direction of Earth's gravity force acting on the person? why ?

a. A
b. B
c. C
d. D

Because :

....

....

Self-Assessment 16 till Lesson 5

1 (A) Put (✓) or (X) :

1. Magnetism is pushing or pulling force. (   )
2. Small objects need small force to move. (   )
3. Gravity changes the mass of an object. (   )

(B) Give a reason for the following :

The moon move around the Earth.

....

....

2 (A) Complete the following sentences :

1. When the mass of Earth .... its attraction force increases.
2. Gravity force of .... helps the planets to move in fixed orbits.
3. Skydiver opens his .... while he falls down toward Earth.

(B) What happens to ...?

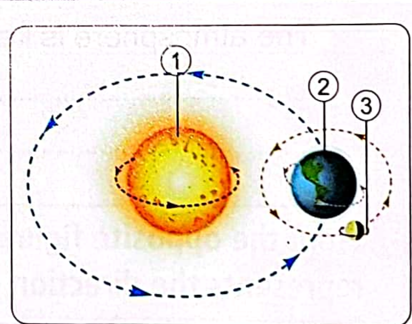
The bicycle speed if the person press the brake.

....

....

3 Look at the opposite figure then complete the following sentences using the words below :

(the Sun – the moon – the Earth – oval orbit)



a. Body number (1) is called ....

b. Body number (2) is called ....
   which revolves around number (1) in ....

c. Body number (3) is called ....

Self-Assessment 17 till Lesson 6

1 (A) Correct the underlined words :

1. The gravity of Earth pulls all planets toward its center. (..............)
2. The planets revolve around the Sun in fixed rectangular orbits. (..............)
3. When the mass of an object increases, its attraction force decreases. (..............)

(B) Give a reason for the following :

A metallic ball reaches Earth's surface before a feather when they fall from the same place at the same moment.

....

....

2 (A) Put (✓) or (✗) :

1. The moon revolves around the Earth by the effect of air resistance. (   )
2. The force of friction always affects against the movement of an object. (   )
3. Skydiver opens his parachute during landing to increases the speed of falling. (   )

(B) Cross out the odd word :

Friction – Gravity – The Sun – Air resistance. (..............)

3 Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Force	a. is a change of an object position due to a certain force.
2. Magnet	b. is the center of the solar system.
3. The Sun	c. attracts metals objects.
4. Motion	d. is a pull or push that affects an object.
	e. is the path in which planets revolve around the Sun.

1. .... 2. .... 3. .... 4. ....

Model Exam

on Concept (4.1)

Total mark

___
20

1 (A) Complete the following sentences : *(5 marks)*

1. If the mass of the moon increases than its real mass, its gravitational attraction will ....
2. Magnet can attract some objects by a force called ....
3. A parachute in air is affected by .... that acts against the .... force of Earth.
4. The Sun locates at the center of ....

(B) What happens if ... ?

A metal ball and feather are fallen down from a tower.

....

....

---

2 (A) Put (✓) or (✗) : *(5 marks)*

1. Air resistance is a type of pulling force. (   )
2. Friction force opposes the movement of an object. (   )
3. The direction and mass of an object are changed due to gravity. (   )
4. After leaving a squeezed spring, it has no force to return back to its original state. (   )

(B) Correct the underlined words :

1. The gravity of the Sun affects the ocean tides. (.............)
2. The gravity force of Earth to a person in a flying airplane is equal to that when the same person stands on the ground. (.............)

---

3 (A) Choose the correct answer : *(5 marks)*

1. A table stands on the ground needs .... to move.
   a. sunlight b. mass c. force d. air
2. Which of the following objects has the least attraction force ? ....
   a. The moon. b. The Earth. c. The Sun. d. The magnet.
3. .... is a factor that acts against gravity force.
   a. Magnetism b. Mass of an object
   c. Air resistance d. Shape of an object

4. The speed of Earth's revolution around the Sun is nearly .... km per hour.
   a. more than 100,000 b. more than 200,000
   c. less than 100,000 d. less than 50,000

(B) Give a reason for the following :

The force of gravity has an important role in the solar system.

....

....

4 (A) Write the scientific term : ***(5 marks)***

1. The force that slows down the movement of objects through air. (.............)
2. The pulling force that causes objects to fall down toward Earth's surface. (.............)
3. A phenomenon takes place in oceans and seas due to the gravity of the moon. (.............)
4. The force that attracts paper clips to the magnet. (.............)

(B) Look at the opposite figure, then choose the correct answer :

1. The force between the two magnets is called ....
   a. gravity. b. magnetism.
   c. contact force. d. wind force.
2. If there is a repulsion force between these two magnets so, they will move ....
   a. away from each other. b. toward each other.
   c. to the Earth's surface. d. to the space.



Worksheets with model answer on concept (4.1)

Worksheet (1)

1-Choose the correct answer

1. A boy on a slide moves down toward the ground due to the effect of…………

a. the boy's height. b. gravity.

c. friction. d. the temperature of air.

2. Gravity keeps the moon in orbit around…………………………….

a. Sun. b. Earth. c. itself. d. another moon

3. Gravitational force of Earth is affected by……………………..

a. mass and time. b. mass and distance

c. mass only. d. distance only

4. If there is no Earth's gravity, the moon would……………...

a. revolves faster around Earth b. still orbit the Earth

c. attracts to Earth. d. floats off into space

5. All the following are properties of Earth's gravity, except……………

a. it pushes objects upward. b. it affects the moon.

c. it pulls objects downward. d. it is a type of attraction force.

6. Earth attracts objects towards…………………..

a. its center. b. the sky. c. the moon. d. the sun.

2- Write the scientific term of each of the following:

1. A force that pulls object down toward the Earth's surface.
(……………………………………………….)
2. A celestial body that orbits the Earth.
(……………………………………………….)
3. A phenomenon takes place in oceans and seas due to gravity of moon.
(……………………………………………….)



Worksheet (2)

1-Put (√) or (×)

1. Magnet must touch objects to attract them. ( )
2. Force is the reason of motion of any body. ( )
3. The change of an object position is called force. ( )
4. Magnet has an invisible force called magnetism. ( )
5. The force of magnet is always attraction force only. ( )
6. Gravity is similar to magnetism because both of them has only pulling force. ( )
7. After leaving a squeezed spring, it has no force to return back to its original state. ( )
8. Small planets have bigger gravity than big planets. ( )
9. Gravity affects only on the moving objects but doesn't affect the objects at rest. ( )
10. Gravity is attraction or repulsion force between two objects. ( )

2- Give reasons for:

1. Paper clips are pulled toward the magnet.

…………………………………………………………………………………………

2. The ball changes its direction after we throw it upwards.

…………………………………………………………………………………………

3. Gravity of Earth is greater than gravity of the moon.

…………………………………………………………………………………………

3- What happens if…?

1. You squeeze a spring then leave it free.

…………………………………………………………………………………………
……………………

2. There is no gravity on Earth.

…………………………………………………………………………………………



Worksheet (3)

1- Choose the correct answer:

1. ……………...force acts on all objects on Earth.

a. Gravity b. Speed c. Electric d. magnetism

2. Gravity depends on the…………………… of a body.

a. speed b. mass c. length d. age

3. Which of the following examples shows the effect of gravity clearly?

a. A paper clip moves toward a magnet.

b. A ball slows down while rolling on the ground.

c. A car speeds up on a road.

d. A ball falls down toward the ground.

4. A table stands on the ground needs……………..to move.

a. sunlight b. mass c. force d. air

5. All the following sentences are related to gravity, except

a. it is a pulling force.

b. it can change the direction of a moving object.

c. it increases the mass of an object.

d. it arises between Earth and the moon.



2- Put (V) or (X):

1. **All objects on Earth's surface is affected by magnetism force. ( )**
2. **Gravity of Earth push objects towards its center. ( )**
3. **The direction and mass of an object are changed due to gravity. ( )**
4. **All objects are pulled toward the ground due to the effect of gravity( )**
5. **Any object on Earth's surface is affected by repulsion force of gravity( )**

3- Complete the following sentences using words below:

(Direction - gravity- center - pulling)

1. **The direction of Earth's gravity is always toward………………….. of Earth.**
2. **The force of gravity is always……………. force, and it changes the………………. Of movement.**
3. **Any object has……………………….depending on its mass.**



Worksheet (4)

1- Complete the following sentences:

1. An object with more mass that pulls another object with less mass has a force known as……………
2. A magnet has………….. force that attracts and pulls metal objects toward it.
3. A parachute in air is affected by…………………… that acts against the……………… force of Earth.
4. A person can control the speed of his bike by using…………….. to slow down its movement.
5. The force that arises between the bicycle brake and the tires is called……………..which slows down the movement of the bicycle.
6. Air resistance is a type of……………… force.
7. The direction of………………… force opposes the direction of a body moves through air.
8. The attraction force between the Sun and Earth is……………… than that between Earth and the moon because the Sun has………………mass.

2- Write the scientific term of each of the following:

1. The force that slows down the movement of objects through air.

   (…………………………………………………)

2. The force by which metals are attracted or pulled to a magnet.

   (…………………………………………………)

3. A type of friction force that opposes the movement of an object as it passes through air. (…………………………………………………)
4.

5. The tool that is used by skydiver to slow his drop.

(……………………………………………….)

3- Give reasons for:

1. Skydiver opens his parachute during landing.

………………………………………………………………………………………

2. When you press the bicycle brake, its speed will stop moving after few seconds.

………………………………………………………………………………………

3. Some iron nails are attracted to a magnet.

………………………………………………………………………………………

4- What happens to...?

1. Planets if the gravity of the Sun disappears.

………………………………………………………………………………………

2. The speed of skydiver if he opens his parachute during landing.

………………………………………………………………………………………

3. The gravity pulling force between two bodies when their masses decreases.

………………………………………………………………………………………



Worksheet (5)

1- Put (✓) or (x):

1. Air resistance is a factor that speeds up the falling objects toward the Earth. ( )
2. All objects on Earth's surface are affected by gravity force which pulls objects downward. ( )
3. There is no air in space so, air resistance slows down the movement of objects through space. ( )
4. If there is no air resistance on Earth, all objects will reach the Earth's surface at the same moment when dropping them from the same height. ( )
5. Air resistance force acts in the opposite direction of gravity force. ( )
6. Heavier objects reach Earth's surface before smaller objects due to the effect of air resistance which affects their movement. ( )
7. Air resistance is a type of pulling force. ( )

2- Complete the following sentences using the words below:

(Law of Motion - slows down - gravity- air resistance - longer - shorter - constant)

1. The force that pulls objects down toward Earth's surface is called…………………
2. When the skydiver opens his parachute the force of…………………makes its speed……………………
3. When throw a plastic ball with holes from 5-meter height, it will take………..…. time to reach the ground while a paper clip takes……………… time when it is thrown from the same height.
4. The law which states that the force of gravity is………… and acts on all objects in the same way is called…………………………..……



Worksheet (6)

1- Choose the correct answer:

1. The force of…………………….. keeps the planets on their paths around the Sun.

a. air resistance b. friction c. gravity d. electricity

2. Gravity is……………………………force that holds all objects in their places.

a. visible pulling b. visible pushing
c. invisible pulling d. invisible

3. The planets revolve around the Sun in fixed…………… orbits.

a. oval b. irregular c. rectangular d. triangular

4. The speed of Earth's revolution around the Sun is nearly……………… km per hour.

a. more than 100,000 b. more than 200,000
c. less than 100,000 d. less than 50,000

5. …………………………is (are) the center of the solar system.

a. The Earth b. The Sun
c. The moon and Earth d. The Sun and Earth

2- Put (V) or (x):

1. The Sun revolves around Earth. (   )
2. The planets revolve around the Sun by the effect of gravitational pushing force. (   )
3. Gravity is an attraction force that can be seen easily. (   )
4. The orbit of each planet has an ellipse shape. (   )
5. The Earth's gravity keeps all planets in their orbits. (   )
6. The scientist Nicolas Copernicus stated that Earth revolves around the Sun. (   )



Model answer on concept (4.1)

Worksheet (1)

1- choose

1. b 2. b 3. b 4. d 5. a 6. a

2- Write scientific term

1. Gravity. 2.The moon. 3. The ocean tides.

Worksheet (2)

1 - Put (V) or (x)

1. (x) 2. (✓) 3. (x) 4. (✓) 5. (x) 6. (x) 7. (x) 8. (x) 9. (x) 10. (x)

2- Give reason

1. Due to the force of magnetism.
2. Because gravity force always pulls it downwards.
3. Because the mass of Earth is greater than the mass of the moon.

3- What happen

1. The spring will be pushed back when you leave it free.
2. All objects on its surface will float off into space.

Worksheet (3)

1- Choose

1. a 2. b 3. d 4. c 5. c

2- Put (V) or (x)

1. (x) 2. (x) 3. (x) 4. (✓) 5. (x)

3- Complete

1. Center 2. Pulling – direction 3. Gravity



Worksheet (4)

1- Complete

1. gravity. 2. Magnetism 3.air resistance – gravity

4.Brake 5. Friction 6. Friction 7. air resistance 8. bigger – bigger

2- Write scientific term

1. Air resistance. 2. Magnetism. 3. Air resistance. 4. Parachute.

3- Give reason

1. To slow down his speed on landing due to air resistance.
2. Because the brake produces friction force which slows the movement of the bicycle.
3. Because magnetism force pulls them to the magnet.

4- What happen

1. They will leave their orbits and float off into space.
2. The speed decreases gradually.
3. The gravity force will decrease.

Worksheet (5)

1- Put (V) or (x)

1. (x) 2. (✓) 3. (x) 4. (✓) 5. (✓) 6. (✓) 7. (x)

2- Complete

1. gravity. 2.air resistance - slows down. 3. longer-shorter

4.constant-law of motion

Worksheet (6)

1- Choose

1. c 2. c 3. a 4. a 5. b

2- Put (V) or (x)

1. (x) 2. (x) 3. (x) 4. (✓) 5. (x) 6. (✓)

Unit 4 – concept 1 - questions

Lesson 1

Choose the correct answer:

1. A boy on a slide moves down toward the ground due to the effect of ………………..
   a. the boy's height.   c. friction
   b. gravity   d. the temperature of air

2. Gravity keeps the moon in orbit around ……………………
   a. sun   b. earth   c. itself   d. another moon

3. Gravitational force of Earth is affected by ……………..
   a. mass and time   c. mass only
   b. mass and distance   d. distance only

4. If there is no Earth's gravity, the moon would ………………..
   a. revolve faster around Earth
   b. still orbit Earth
   c. attract to Earth
   d. float off into space

5. All the following are properties of Earth's gravity, except ……………..
   a. It pushes objects upward
   b. It affects the moon
   c. It pulls objects downward
   d. it is a type of attraction force

6. Earth attracts objects towards …………………
   a. its center   b. the sky   c. the moon   d. the sun

7. Which of the following examples does not clearly explain how the force of gravity pulls objects toward the center of Earth? …………..
    a. An apple falls down from a tree onto the soil
    b. A skydiver jumps out of an airplane
    c. A pen moves on a table and drops onto the floor
    d. A rocket moves up toward the sky

Put (✓) or (X):

1) Gravity pulls objects toward the center of Earth. ( )
2) Objects are pushed away of each other due to gravity. ( )
3) Planets in the solar system revolve in fixed orbits due to the gravity between the sun and planets. ( )
4) If the gravity of Earth disappears the moon will float off into space. ( )
5) The gravity of moon affects the ocean tides. ( )
6) As the mass of an object increases, its gravitational attraction decreases. ( )
7) Gravity affects the movement of objects. ( )
8) If two objects don't touch each other, there is no gravity between them. ( )
9) The gravitational force of Earth to a person in a flying airplane is smaller than it when the same person stands on the ground. ( )

Write the scientific term of each of the following:

1. A force that pulls object down toward the Earth's surface.

(………………………………)

2. A celestial body that orbits the Earth. (…………………………..)
3. A phenomenon takes place in oceans and seas due to gravity of moon. (………………………………………………)

Complete the following sentences:

1) Objects move down from high place toward the ground due to the effect ………………………………………… .
2) The moon moves around ……………………… due to gravity.
3) Gravity pulls objects toward the ……………………….. of Earth.
4) When the distance between the moon and the Earth increases, the gravitational attraction between them …………………………….. .
5) The gravity of the moon affects the phenomenon of ocean ………………… .
6) If the mass of the moon increases than its real mass, its gravitational attraction will ………………………………. .

What happens if…?

1. The distance between the moon and Earth increases to twice.

……………………………………………………………………………………………

……………………………………………………………………………………………

2. The mass of the moon decreases to half.

……………………………………………………………………………………………

Give reasons for:

1) The moon is attracted to Earth.

……………………………………………………………………………………………

……………………………………………………………………………………………

2) The gravity between two objects is affected by the distance between them.

……………………………………………………………………………………………

……………………………………………………………………………………………

3) The force of gravity has an important role in the solar system.

……………………………………………………………………………………………

……………………………………………………………………………………………

The opposite figure shows two apples, one of them has a mass of 50 gm while the mass of the other is 80 gm.



Which of these apples is affected by Earth's gravity more than the other? Give a reason for your answer.

……………………………………………………………………………………………….

Because ……………………………………………………………………………….

………………………………………………………………………………………………

<u>Choose the correct answer :</u>

The gravity of Earth is affected by all of the following, expect ……………….

a. The mass of the fruit
b. The distance between the fruit and the Earth's surface
c. The type of the fruit

Look at the opposite figure then choose the correct answer from those between brackets:



1. The force that causes skydivers to move down is called ....

(gravity of Earth - gravity of moon – gravity of sun)

2. When skydivers open their parachuts they are attracted to …………………

(Earth's center – moon's surface – the sky)

Lesson 2

Choose the correct answer:

1) Which force pulls a basketball to fall into the basketball hoop? ....
   a. Magnetism
   b. Friction
   c. Gravity
   d. Motion

2) Magnetism is a kind of .... force.
   a. attraction only
   b. repulsion only
   c. visible
   d. invisible

3) A person can exert a weak force to move ……………
   a. a big truck
   b. a toy car
   c. a real car
   d. a very big rock

4) Wind turbine blades move by the effect of ………………
   a. magnetism
   b. wind
   c. electricity
   d. water vapor

5) All the following are properties of magnetism, except ……………..
   a. It is an invisible force
   b. It happens only between two touched objects
   c. It may be pushing or pulling force
   d. It may push another magnet away

6) Which of the following statements describes gravity in a correct way: ………………
   a. Gravity pulls objects only.
   b. Gravity is found on Earth only.
   c. Gravity pushes objects away from each other.
   d. Gravity increases between small objects.

7) In contact force, the two objects need to ………………… each other.
   a. attract b. repel c. touch d. break

8) Any object has mass must have ……………….
   a. gravity force c. definite shape
   b. definite color d. electric charge

Choose from column (B) what suits it in column (A):

(A)	(B)
1. Motion	a. Is the force between two objects that touch each other.
2. Contact force	b. Is a pull or push that affects an objects.
3. Non contact force	c. Is the change of an object location due to force.
4. Force	d. Is the force between two objects that don't touch each other.
	e. Is the change of an object mass due to gravity

Put (✓) or (X):

1) Magnet must touch objects to attract them. ( )
2) Force is the reason of motion of any body. ( )
3) The change of an object position is called force. ( )
4) Magnet has an invisible force called magnetism. ( )
5) The force of magnet is always attraction force only. ( )
6) Gravity is similar to magnetism because both of them has only pulling force. ( )
7) After leaving a squeezed spring, it has no force to return back to its original state. ( )
8) Gravity is attraction or repulsion force between two objects. ( )
9) Planets revolve around the sun in fixed orbits due to the effect of gravity. ( )
10) Small planets have bigger gravity than big planets. ( )
11) Gravity affects only on the moving objects but doesn't affect the objects at rest. ( )
12) The moon stay in fixed orbit around Earth due to the gravity between them. ( )

Write the scientific term of each of the following:

1. The effect that pull or push an object to make it move.

   (…………………..)

2. The change of an object position related to another object.

   (……………………...)

3. The force that is found between two magnets or between the magnet and an object. (………………………………)
4. The pulling force that causes object to fall down toward Earth's surface. (……………………………………………)
5. The force of attraction that changes the direction of a moving object in air towards the ground. (……………………)

Complete the following sentences:

1) The object at rest needs ……………………….. to move.
2) The force that arises between two objects when they touch each other is called ……………………… force.
3) When an object changes its position, this object is in a state of ………………………… .
4) Force may push or ………………… the object to make it move.
5) The force that is needed to move a small bike is ……………………… than that needed to move a truck.
6) Magnet can attract some objects by a force called …………………………………… .

7) The force of magnetism may pull objects towards the magnet or ………………… objects away from it, while …………………… force can pull objects toward Earth.
8) The astronauts float in space due to the absence of …………………… .
9) The gravity of Earth is ……………………… than that of the moon because the Earth has ……………………… mass.
10) When a ball is thrown into the air, it moves back down, so its ……………………. changes due to the effect of ……………………. .
11) Any body that has a mass must have ……………………… .

Give reasons for:

1. Paper clips are pulled toward the magnet.

……………………………………………………………………………………………

……………………………………………………………………………………………

2. The ball changes its direction after we throw it upwards.

……………………………………………………………………………………………

……………………………………………………………………………………………

3. Gravity of Earth is greater than gravity of the moon.

……………………………………………………………………………………………

……………………………………………………………………………………………

What happens if…?

1) You squeeze a spring then leave it free.

…………………………………………………………………………………………………

…………………………………………………………………………………………………

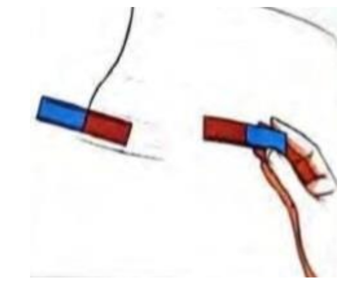
2) There is no gravity on Earth.

…………………………………………………………………………………………………

…………………………………………………………………………………………………

Look at the opposite figure then choose the correct answer:

1. The force between the two magnets is called ………………
    a. Gravity
    b. Magnetism
    c. contact force
    d. wind force



2. If there is a repulsion force between these two magnets so, they will move ………………..
    a. away from each other
    b. toward each other
    c. to the Earth's surface
    d. to the space

Arrange the following bodies ascendingly according to the gravity force they exert :

(The sun – Bowling ball – Truck – The moon – Earth – An egg)

1) ………………….. 4) ……………………..

2) ………………….. 5) ……………………..

3) ………………….. 6) ……………………..

Lesson 4

Choose the correct answer:

1) Friction force ………………… the movement of objects.
   a. slows down c. speeds up
   b. increases d. doesn't affect

2) Magnetism is a force that attracts objects made of the following materials, except …………….
   a. iron b. nickel c. wood d. cobalt

3) The force that opposes the movement of objects as they pass through air is known as ……………….
   a. magnetism c. electric
   b. gravity d. air resistance

4) All the following sentences shows the effect of gravity, except ………
   a. the moon orbits the Earth
   b. the planets orbit the sun
   c. the atmosphere is kept around the Earth

d. the repulsion between two magnets

5) …………. is considered as a type of friction force.
   a. Air resistance   c. Gravity
   b. Magnetism   d. Electric force

6) Which the following objects has the least attraction force?
   a. the moon   c. the sun
   b. the Earth   d. the magnet

Put (✓) or (x):

1. Gravity is not affected by the mass of an object. ( )
2. Gravity of Earth does not change the direction of a body that is thrown up into the air. ( )
3. Earth pulls living organisms only toward its center ( )
4. Force of gravity can be seen easily, but we cannot see its effects. ( )
5. When using the bicycle brake, the bicycle stops due to the friction force between the brake and the tires. ( )
6. Magnetism is a type of friction force ( )
7. Skydiving sport depends on gravity force and air resistance force. ( )
8. Friction force opposes the movement of an object. ( )
9. Air resistance slows down the speed of parachutes. ( )
10. Magnetism is the force that attracts some metals. ( )

Complete the following sentences:

1) An object with more mass that pulls another object with less mass has a force known as …………………….. .
2) A magnet has ……………………… force that attracts and pulls metal objects toward it.
3) A parachute in air is affected by …………………………………….. that acts against the ……………………….. force of Earth.
4) A person can control the speed of his bike by using ………………… to slow down its movement.
5) The force that arises between the bicycle brake and the tires is called ………………………… which slows down the movement of the bicycle.
6) Air resistance is a type of ……………………….. force.
7) The direction of ……………………………….. opposes the direction of a body moves through air.
8) The attraction force between the sun and Earth is ……………………… than that between Earth and the moon because the sun has ……………………… mass.

Write the scientific term of each of the following:

1. The force that slows down the movement of objects through air. (………………………………………)

2. The force by which metals are attracted or pulled to a magnet. (………………………………..)
3. A type of friction force that opposes the movement of an object as it passes through air.

   (……………………………………)
4. The tool that is used by skydiver to slow his drop.

   (…………………………)

Give reasons for:

1) Skydiver opens his parachute during landing.

…………………………………………………………………………………………….

…………………………………………………………………………………………….

2) When you press the bicycle brake, its speed will stop moving after few seconds.

…………………………………………………………………………………………….

…………………………………………………………………………………………….

3) Some iron nails are attracted to a magnet.

…………………………………………………………………………………………….

…………………………………………………………………………………………….

What happens to …?

1. Planets if the gravity of the sun disappears.

…………………………………………………………………………………………….

………………………………………………………………………………………………..

2. The speed of skydiver if he opens his parachute during landing.

………………………………………………………………………………………………..

3. The gravity pulling force between two bodies when their masses decreases.

………………………………………………………………………………………………..

Lesson 5

Choose the correct answer:

1) If you have two balls which are different in mass. Which one of them will reach the ground first if we drop both of them from the same height?.
   a. The ball with bigger mass.
   b. The ball with smaller mass.
   c. The two balls will reach the ground at the same moment.
   d. One ball will reach the ground while the other moves upward.

2) What is the effect of air resistance on the speed of an object when it falls downward due to gravity?
   a. Air resistance speeds up the object as it falls.
   b. Air resistance doesn't affect the speed of an object as it falls.
   c. Air resistance slows an object as it falls.
   d. Air resistance changes the direction of an object as it falls.

3) When a basketball falls down from a height, it is affected by …………………..

    a. Air resistance force only.
    b. Gravity force only.
    c. Air resistance and gravity force.
    d. air resistance and electric force.

4) If there is no air resistance on Earth and we drop an iron cube and wooden cube at the same time from the same height, they will …………………..

    a. reach the floor at the same moment.
    b. reach the floor at different time.
    c. be affected by magnetic force during falling.
    d. move upward against gravity force.

5) ………………. is a factor that acts against gravity force.

    a. Magnetism
    b. Mass of an object.
    c. Air resistance
    d. Shape of an object

6) Which of the following objects will take longer time to reach the ground if they are dropped from 5 meter height at the same time?.........

    a. An iron ball
    b. A feather
    c. A plastic ball
    d. A hammer

Put (✓) or (x):

1. Air resistance is a factor that speeds up the falling objects toward the Earth. ( )
2. All objects on Earth's surface are affected by gravity force which pulls objects downward. ( )

3. There is no air in space so, air resistance slows down the movement of objects through space. ( )
4. If there is no air resistance on Earth, all objects will reach the Earth's surface at the same moment when dropping them from the same height. ( )
5. Air resistance force acts in the opposite direction of gravity force. ( )
6. Heavier objects reach Earth's surface before smaller objects due to the effect of air resistance which affects their movement. ( )
7. Air resistance is a type of pulling force. ( )

Complete the following sentences using the words below:

(Law of Motion – slows down – gravity – air resistance – longer - shorter – constant)

1) The force that pulls objects down toward Earth's surface is called ……………………… .
2) When the skydiver opens his parachute the force of ………………………………………. makes its speed ………………………………… .

3) When throw a plastic ball with holes from 5 meter height, it will take …………………….. time to reach the ground while a paper clip takes ………………………. time when it is thrown from the same height.
4) The law which states that the force of gravity is ………………………….. and acts on all objects in the same way is called …………………………………………………… .

Give reasons for:

1. Air resistance affects the movement of an object which falls from a height.

……………………………………………………………………………………………………

…………………………………………………………………………………………………..

2. A pencil takes a longer time to reach Earth's surface than a large rock if they are thrown from the same height.

…………………………………………………………………………………………………

…………………………………………………………………………………………………

What happens if…?

1) A metal ball and a feather are fallen down from a tower.

……………………………………………………………………………………………………

2) You throw two iron balls have the same mass from the same height.

………………………………………………………………………………………………

3) There is no air resistance and two objects with different masses are thrown from the same height.

……………………………………………………………………………………………..

Imagine that jar (A) contains air while jar (B) doesn't contain air.

<u>Choose the correct answer:</u>

1. The two bodies in jar (A) are affected by ....
    a. Gravity force only.
    b. Friction force only.
    c. Air resistance and gravity.
    d. Gravity and electricity.

Figure (A) Figure (B)

2. The two bodies in jar (B) are affected by …………............
    a. gravity force only
    b. air resistance only
    c. air resistance and gravity
    d. gravity and electricity

3. In jar (A), the rock reaches faster than the feather because it has ………………………..
    a. more mass
    b. higher temperature
    c. Less mass
    d. lower temperature

<u>Put (✓) or (x):</u>

1) In jar (B), the rock will reach first. ( )
2) In jar (A), air resistance affects the feather more than the rock during falling downward. ( )

3) In jar (A) the rock falls before the feather due to the absence of air resistance. ( )

Lesson 6

Choose the correct answer:

1. The force of ………………… keeps the planets on their paths around the sun. d. electricity
   a. air resistance
   b. friction
   c. gravity
   d. electricity

2. Gravity is ……….. force that holds all objects in their places.
   a. visible pulling
   b. visible pushing
   c. invisible pulling
   d. invisible

3. The planets revolve around the sun in fixed ……………. orbits.
   a. oval b. irregular c. rectangular d. triangular

4. The speed of Earth's revolution around the sun is nearly ………. Km per hour.
   a. More than 100,000
   b. More than 200,000
   c. less than 100,000
   d. Less than 50,000

5. ………… is (are) the center of the solar system.
   a. The Earth
   b. The Sun
   c. The moon and Earth
   d. The Sun and Earth

Put (✓) or (X):

1. The sun revolves around Earth. ( )
2. The planets revolve around the sun by the effect of gravitational pushing force. ( )
3. Gravity is an attraction force that can be seen easily. ( )
4. The orbit of each planet has an ellipse shape. ( )
5. The Earth's gravity keeps all planets in their orbits. ( )
6. The scientist Nicolaus Copernicus stated that Earth revolves around the sun. ( )

Complete the following sentences:

1) The sun locates at the center of ……………………………………………….. .
2) In the solar system, all planets revolve in fixed paths called ………………….. .
3) The force that keeps all planets around the sun is called ………………………………………. .
4) The scientist Nicolaus Copernicus stated that the …………………… revolves around the ………………… .

5) Gravity is the attraction or pulling force that keeps all …………………….. in their orbits around the sun.
6) The Earth revolves around the sun in a fixed path that has ………………… shape.

Give a reason for the following:

Planets revolve around the sun in fixed orbits.

…………………………………………………………………………………………………….

…………………………………………………………………………………………………….

What happens to …?

The planets if the sun has no gravity.

…………………………………………………………………………………………………….

Look at the opposite figure, which illustrates a part of the solar system then answer the following questions:

1. The body (A) is called ………………
   a. The sun
   b. The Earth
   c. The moon
   d. A magnet

2. The shape of the path (B) is …………………
   a. Ellipse b. circular c. rectangular d. triangular

3. The body (C) may be ………………

a. the sun   b. the moon   c. A planet   d. A magnet

4. The body (C) revolves around the body (A) due to the effect of …………………. force.
   a. electric
   b. gravity
   c. air resistance
   d. repulsion

Unit 4 – concept 1 - answers

Lesson 1

Choose the correct answer:

1. A boy on a slide moves down toward the ground due to the effect of ………………..
   1. the boy's height.
   2. gravity

   c. friction

   d. the temperature of air

2. Gravity keeps the moon in orbit around ……………………

   a. sun　b. earth　c. itself　d. another moon

3. Gravitational force of Earth is affected by ………………
   a. mass and time
   b. mass and distance
   c. mass only
   d. distance only

4. If there is no Earth's gravity, the moon would …………………
   a. revolve faster around Earth
   b. still orbit Earth
   c. attract to Earth
   d. float off into space

5. All the following are properties of Earth's gravity, except ……………..
   a. It pushes objects upward
   b. It affects the moon
   c. It pulls objects downward
   d. it is a type of attraction force

6. Earth attracts objects towards …………………
   a. its center　b. the sky　c. the moon　d. the sun

7. Which of the following examples does not clearly explain how the force of gravity pulls objects toward the center of Earth? ....
    a. An apple falls down from a tree onto the soil
    b. A skydiver jumps out of an airplane
    c. A pen moves on a table and drops onto the floor
    d. A rocket moves up toward the sky

Put (✓) or (X):

1) Gravity pulls objects toward the center of Earth. (✓)
2) Objects are pushed away of each other due to gravity. (**X**)
3) Planets in the solar system revolve in fixed orbits due to the gravity between the sun and planets. (✓)
4) If the gravity of Earth disappears the moon will float off into space. (✓)
5) The gravity of moon affects the ocean tides. (✓)
6) As the mass of an object increases, its gravitational attraction decreases. (**X**)
7) Gravity affects the movement of objects. (✓)
8) If two objects don't touch each other, there is no gravity between them. (**X**)
9) The gravitational force of Earth to a person in a flying airplane is smaller than it when the same person stands on the ground. (✓)

Write the scientific term of each of the following:

1. A force that pulls object down toward the Earth's surface. (**Gravity**)
2. A celestial body that orbits the Earth. (**The moon**)

3. A phenomenon takes place in oceans and seas due to gravity of moon. (**The ocean tides**)

Complete the following sentences:

1) Objects move down from high place toward the ground due to the effect **Earth's gravity**.
2) The moon moves around **Earth** due to gravity.
3) Gravity pulls objects toward the **center** of Earth.
4) When the distance between the moon and the Earth increases, the gravitational attraction between them **decreases**.
5) The gravity of the moon affects the phenomenon of ocean **tides**.
6) If the mass of the moon increases than its real mass, its gravitational attraction will **increase**.

What happens if…?

1. The distance between the moon and Earth increases to twice.
   - **The gravitational attraction between them would become smaller.**

2. The mass of the moon decreases to half.
   - **The moon would have less gravity.**

Give reasons for:

1) The moon is attracted to Earth.
   - **Due to the gravitation attraction between Earth and the moon.**

2) The gravity between two objects is affected by the distance between them.
   - **Because when the distance between them decreases, the gravity increases and vice versa.**

3) The force of gravity has an important role in the solar system.
   - **Because gravity between the sun and objects in the solar system keeps the planets revolve in fixed orbits.**

The opposite figure shows two apples, one of them has a mass of 50 gm while the mass of the other is 80 gm.



Which of these apples is affected by Earth's gravity more than the other? Give a reason for your answer.

The apple which has 80 gm mass.

Because **gravity increases by increasing the mass.**

Choose the correct answer:

The gravity of Earth is affected by all of the following, expect ……………….

a. The mass of the fruit
b. The distance between the fruit and the Earth's surface
c. The type of the fruit

Look at the opposite figure then choose the correct answer from those between brackets:

1. The force that causes skydivers to move down is called ....

   (**gravity of Earth** - gravity of moon – gravity of sun)

2. When skydivers open their parachuts they are attracted to ....

   (**Earth's center** – moon's surface – the sky)

Lesson 2

Choose the correct answer:

1) Which force pulls a basketball to fall into the basketball hoop? ....
   a. Magnetism
   b. Friction
   c. Gravity
   d. Motion

2) Magnetism is a kind of .... force.
   a. attraction only
   b. repulsion only
   c. visible
   d. invisible

3) A person can exert a weak force to move ....
   a. a big truck
   b. a toy car
   c. a real car
   d. a very big rock

4) Wind turbine blades move by the effect of ....
   a. magnetism
   b. wind
   c. electricity
   d. water vapor

5) All the following are properties of magnetism, except ....

   a. It is an invisible force
   b. It happens only between two touched objects
   c. It may be pushing or pulling force
   d. It may push another magnet away

6) Which of the following statements describes gravity in a correct way: ....

   a. Gravity pulls objects only.
   b. Gravity is found on Earth only.
   c. Gravity pushes objects away from each other.
   d. Gravity increases between small objects.

7) In contact force, the two objects need to .... each other.

   a. attract b. repel c. touch d. break

8) Any object has mass must have ....

   a. gravity force c. definite shape
   b. definite color d. electric charge

Choose from column (B) what suits it in column (A):

(A)	(B)
1. Motion c	a. Is the force between two objects that touch each other.
2. Contact force a	b. Is a pull or push that affects an objects.

3. Non contact force **d**	c. Is the change of an object location due to force.
4. Force **b**	d. Is the force between two objects that don't touch each other.
	e. Is the change of an object mass due to gravity

Put (✓) or (X):

1) Magnet must touch objects to attract them. (**X**)
2) Force is the reason of motion of any body. (**✓**)
3) The change of an object position is called force. (**X**)
4) Magnet has an invisible force called magnetism. (**✓**)
5) The force of magnet is always attraction force only. (**X**)
6) Gravity is similar to magnetism because both of them has only pulling force. (**X**)
7) After leaving a squeezed spring, it has no force to return back to its original state. (**X**)
8) Gravity is attraction or repulsion force between two objects. (**X**)
9) Planets revolve around the sun in fixed orbits due to the effect of gravity. (**✓**)
10) Small planets have bigger gravity than big planets. (**X**)
11) Gravity affects only on the moving objects but doesn't affect the objects at rest. (**X**)
12) The moon stay in fixed orbit around Earth due to the gravity between them. (**✓**)

Write the scientific term of each of the following:

1. The effect that pull or push an object to make it move.
   (**force**)
2. The change of an object position related to another object.
   (**motion**)
3. The force that is found between two magnets or between the magnet and an object. (**magnetism**)
4. The pulling force that causes object to fall down toward Earth's surface. (**gravity of Earth**)
5. The force of attraction that changes the direction of a moving object in air towards the ground. (**gravity**)

Complete the following sentences:

1) The object at rest needs **force** to move.
2) The force that arises between two objects when they touch each other is called **contact** force.
3) When an object changes its position, this object is in a state of **motion**.
4) Force may push or **pull** the object to make it move.
5) The force that is needed to move a small bike is **smaller** than that needed to move a truck.
6) Magnet can attract some objects by a force called **magnetism**.
7) The force of magnetism may pull objects towards the magnet or **push** objects away from it, while **gravity** force can pull objects toward Earth.
8) The astronauts float in space due to the absence of **gravity**.
9) The gravity of Earth is **bigger** than that of the moon because the Earth has **bigger** mass.

10) When a ball is thrown into the air, it moves back down, so its **direction** changes due to the effect of **gravity**.
11) Any body that has a mass must have **gravity**.

Give reasons for:

1. Paper clips are pulled toward the magnet.
   - **Due to the force of magnetism.**

2. The ball changes its direction after we throw it upwards.
   - **Because gravity force always pull it downwards.**

3. Gravity of Earth is greater than gravity of the moon.
   - **Because the mass of Earth is greater than the mass of the moon.**

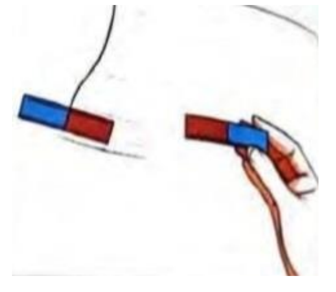
What happens if…?

1) You squeeze a spring then leave it free.
   - **The spring will be pushed back when you leave it free.**

2) There is no gravity on Earth.
   - **All objects on its surface will float off into space.**

Look at the opposite figure then choose the correct answer:

1. The force between the two magnets is called ………………
   a. Gravity
   b. Magnetism
   c. contact force
   d. wind force



2. If there is a repulsion force between these two magnets so, they will move ....
   a. away from each other
   b. toward each other
   c. to the Earth's surface
   d. to the space

Arrange the following bodies ascendingly according to the gravity force they exert :

(The sun – Bowling ball – Truck – The moon – Earth – An egg)

1. An egg
2. Bowling ball
3. Truck
4. The moon
5. Earth
6. The sun

Lesson 4

Choose the correct answer:

1) Friction force .... the movement of objects.
   a. slows down
   b. increases
   c. speeds up
   d. doesn't affect

2) Magnetism is a force that attracts objects made of the following materials, except ....
   a. iron
   b. nickel
   c. wood
   d. cobalt

3) The force that opposes the movement of objects as they pass through air is known as ....
   a. magnetism
   b. gravity
   c. electric
   d. air resistance

4) All the following sentences shows the effect of gravity, except ....

a. the moon orbits the Earth
b. the planets orbit the sun
c. the atmosphere is kept around the Earth
d. the repulsion between two magnets

5) .... is considered as a type of friction force.

a. Air resistance
b. Magnetism
c. Gravity
d. Electric force

6) Which the following objects has the least attraction force?

a. the moon
b. the Earth
c. the sun
d. the magnet

Put (✓) or (x):

1. Gravity is not affected by the mass of an object. (X)
2. Gravity of Earth does not change the direction of a body that is thrown up into the air. (X)
3. Earth pulls living organisms only toward its center (X)
4. Force of gravity can be seen easily, but we cannot see its effects. (X)
5. When using the bicycle brake, the bicycle stops due to the friction force between the brake and the tires. (✓)
6. Magnetism is a type of friction force (X)
7. Skydiving sport depends on gravity force and air resistance force. (✓)
8. Friction force opposes the movement of an object. (✓)
9. Air resistance slows down the speed of parachutes. (✓)
10. Magnetism is the force that attracts some metals. (✓)

Complete the following sentences:

1) An object with more mass that pulls another object with less mass has a force known as **gravity**.
2) A magnet has **magnetism** force that attracts and pulls metal objects toward it.
3) A parachute in air is affected by **air resistance** that acts against the **gravity** force of Earth.
4) A person can control the speed of his bike by using **brake** to slow down its movement.
5) The force that arises between the bicycle brake and the tires is called **friction** which slows down the movement of the bicycle.
6) Air resistance is a type of **friction** force.
7) The direction of **air resistance** opposes the direction of a body moves through air.
8) The attraction force between the sun and Earth is **bigger** than that between Earth and the moon because the sun has **bigger** mass.

Write the scientific term of each of the following:

1. The force that slows down the movement of objects through air. (**air resistance**)
2. The force by which metals are attracted or pulled to a magnet. (**magnetism**)
3. A type of friction force that opposes the movement of an object as it passes through air. (**air resistance**)
4. The tool that is used by skydiver to slow his drop.

   (**parachute**)

Give reasons for:

1) Skydiver opens his parachute during landing.
    - **To slow down his speed on landing due to air resistance.**

2) When you press the bicycle brake, its speed will stop moving after few seconds.
    - **Because the brake produces friction force which slows the movement of the bicycle.**

3) Some iron nails are attracted to a magnet.
    - **Because magnetism force pulls them to the magnet.**

What happens to …?

1. Planets if the gravity of the sun disappears.
    - **They will leave their orbits and float off into space.**

2. The speed of skydiver if he opens his parachute during landing.
    - **The speed decreases gradually.**

3. The gravity pulling force between two bodies when their masses decreases.
    - **The gravity force will decrease.**

Lesson 5

Choose the correct answer:

1) If you have two balls which are different in mass. Which one of them will reach the ground first if we drop both of them from the same height?.
    a. The ball with bigger mass.
    b. The ball with smaller mass.
    c. The two balls will reach the ground at the same moment.
    d. One ball will reach the ground while the other moves upward.

2) What is the effect of air resistance on the speed of an object when it falls downward due to gravity?
    a. Air resistance speeds up the object as it falls.
    b. Air resistance doesn't affect the speed of an object as it falls.
    c. Air resistance slows an object as it falls.
    d. Air resistance changes the direction of an object as it falls.

3) When a basketball falls down from a height, it is affected by ……………………
    a. Air resistance force only.
    b. Gravity force only.
    c. Air resistance and gravity force.
    d. air resistance and electric force.

4) If there is no air resistance on Earth and we drop an iron cube and wooden cube at the same time from the same height, they will ....

   a. reach the floor at the same moment.
   b. reach the floor at different time.
   c. be affected by magnetic force during falling.
   d. move upward against gravity force.

5) .... is a factor that acts against gravity force.

   a. Magnetism
   b. Mass of an object.
   c. Air resistance
   d. Shape of an object

6) Which of the following objects will take longer time to reach the ground if they are dropped from 5 meter height at the same time?.........

   a. An iron ball
   b. A feather
   c. A plastic ball
   d. A hammer

Put (✓) or (x):

1. Air resistance is a factor that speeds up the falling objects toward the Earth. (X)
2. All objects on Earth's surface are affected by gravity force which pulls objects downward. (✓)
3. There is no air in space so, air resistance slows down the movement of objects through space. (X)
4. If there is no air resistance on Earth, all objects will reach the Earth's surface at the same moment when dropping them from the same height. (✓)
5. Air resistance force acts in the opposite direction of gravity force. (✓)

6. Heavier objects reach Earth's surface before smaller objects due to the effect of air resistance which affects their movement. (✓)
7. Air resistance is a type of pulling force. (**X**)

Complete the following sentences using the words below:

(Law of Motion – slows down – gravity – air resistance – longer - shorter – constant)

1) The force that pulls objects down toward Earth's surface is called **gravity**.
2) When the skydiver opens his parachute the force of **air resistance** makes its speed **slows down**.
3) When throw a plastic ball with holes from 5 meter height, it will take **longer** time to reach the ground while a paper clip takes **shorter** time when it is thrown from the same height.
4) The law which states that the force of gravity is **constant** and acts on all objects in the same way is called **law of motion**.

Give reasons for:

1. Air resistance affects the movement of an object which falls from a height.
   - **Because it slows down it during its falling.**

2. A pencil takes a longer time to reach Earth's surface than a large rock if they are thrown from the same height.
   - **Because it is affected by air resistance more than the large rock.**

What happens if…?

1) A metal ball and a feather are fallen down from a tower.
   - **The metal ball will reach the ground first.**

2) You throw two iron balls have the same mass from the same height.
   - **They will reach the ground at the same time.**

3) There is no air resistance and two objects with different masses are thrown from the same height.
   - **They will reach the ground at the same time.**

Imagine that jar (A) contains air while jar (B) doesn't contain air.

Choose the correct answer:



Figure (A)



Figure (B)

1. The two bodies in jar (A) are affected by ....
   a. Gravity force only.
   b. Friction force only.
   c. Air resistance and gravity.
   d. Gravity and electricity.

2. The two bodies in jar (B) are affected by ……..…………..
   a. gravity force only
   b. air resistance only
   c. air resistance and gravity
   d. gravity and electricity

3. In jar (A), the rock reaches faster than the feather because it has ………………………..
   a. more mass
   b. higher temperature
   c. Less mass
   d. lower temperature

Put (✓) or (x):

1) In jar (B), the rock will reach first. (X)
2) In jar (A), air resistance affects the feather more than the rock during falling downward. (✓)
3) In jar (A) the rock falls before the feather due to the absence of air resistance. (X)

Lesson 6

Choose the correct answer:

1. The force of ………………… keeps the planets on their paths around the sun. d. electricity
   a. air resistance c. gravity
   b. friction d. electricity

2. Gravity is ………. force that holds all objects in their places.
   a. visible pulling c. invisible pulling
   b. visible pushing d. invisible

3. The planets revolve around the sun in fixed ……………. orbits.
   a. oval b. irregular c. rectangular d. triangular

4. The speed of Earth's revolution around the sun is nearly ………. Km per hour.
   a. More than 100,000
   b. More than 200,000
   c. less than 100,000
   d. Less than 50,000

5. ………… is (are) the center of the solar system.
   a. The Earth c. The moon and Earth
   b. The Sun d. The Sun and Earth

Put (✓) or (X):

1. The sun revolves around Earth. (**X**)
2. The planets revolve around the sun by the effect of gravitational pushing force. (**X**)
3. Gravity is an attraction force that can be seen easily. (**X**)
4. The orbit of each planet has an ellipse shape. (✓)
5. The Earth's gravity keeps all planets in their orbits. (**X**)
6. The scientist Nicolaus Copernicus stated that Earth revolves around the sun. (✓)

Complete the following sentences:

1) The sun locates at the center of **the solar system**.
2) In the solar system, all planets revolve in fixed paths called **orbits**.
3) The force that keeps all planets around the sun is called **gravitational force**.
4) The scientist Nicolaus Copernicus stated that the **Earth** revolves around the **sun**.
5) Gravity is the attraction or pulling force that keeps all **planets** in their orbits around the sun.
6) The Earth revolves around the sun in a fixed path that has **oval** shape.

Give a reason for the following:

Planets revolve around the sun in fixed orbits.

- **Due to the great gravitational pulling force between the sun and the planets.**

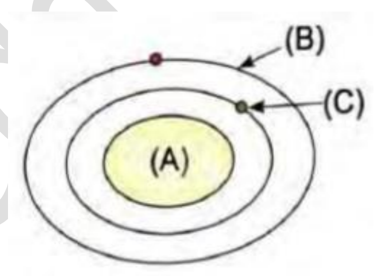
What happens to …?

The planets if the sun has no gravity.

- **They will float off into space.**

Look at the opposite figure, which illustrates a part of the solar system then answer the following questions:

1. The body (A) is called ………………
   a. The sun
   b. The Earth
   c. The moon
   d. A magnet



2. The shape of the path (B) is …………………
   a. Ellipse b. circular c. rectangular d. triangular

3. The body (C) may be ………………
   a. the sun b. the moon c. A planet d. A magnet

4. The body (C) revolves around the body (A) due to the effect of ………………… force.
   a. electric
   b. gravity
   c. air resistance
   d. repulsion